

DETAILED ACTION

1. In view of the appeal brief filed on 6/10/2008, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1 and 3-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 1, claim 1 recites the limitation "at least one mobile station" in line 3. There is insufficient antecedent basis for this limitation in the claim.

With respect to claim 11, claim 11 recites the limitation "at least one mobile station" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3-5, 7, 11, 13, 14, 17, 18, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Padovani et al. (US 6,574,211; hereafter Padovani) in view of Periyalwar et al. (US 6,907,020; hereafter Periyalwar).

With respect to claim 1, Padovani discloses a method for high rate packet data transmission in a wireless CDMA system where a mobile station sends a request for high speed data transmission to a base station (810 of Figure 8; column 30, lines 11-18) and the base station sends a grant back to the mobile station (814, 816 of Figure 8; column 30, lines 11-18) to initiate the high speed data transmission (818 of Figure 8; column 30, lines 11-18). Padovani further discloses a grant message for scheduling data transmission as an improvement to the IS-95 standard protocol.

Padovani does not disclose that the grant sent from the base station to the mobile station will establish a rate limit for further transmissions from the mobile station and have a specified rate provided by the grant message and a rate control scheduling mode protocol.

Periyalwar, in a method for wireless communication networks, discloses a technique (Abstract; Figure 1) for establishing a transmission rate between a base station and mobile station that includes a rate-control bit message (column 12, lines 63-67) containing a specific rate of transmission 806 of Figure 8). Periyalwar uses a rate control protocol (Abstract) to set transmit rates.

Periyalwar realizes the advantage of more effective power control by using variable data rate settings in a grant message (column 4, lines 44-50). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Periyalwar with the method of Padovani.

With respect to claim 3, Padovani does not disclose scheduling a subsequent reverse link transmission by the mobile station by sending a rate control instruction according to a second scheduling protocol.

Periyalwar uses a first scheduling protocol (Abstract; based on interference levels) and a second scheduling protocol (Abstract; based on required transmission energy) to set transmit rates. The interference level is continually adjusted as mobile stations move closer to and farther from the base station.

Periyalwar realizes the advantage of more effective power control by using variable data rate settings in a grant message (column 4, lines 44-50). Thus it would

have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Periyalwar with the method of Padovani.

With respect to claim 4, Padovani discloses sending the grant message to the mobile station over a pilot/DRC channel (column 30, lines 42-45).

Padovani fails to disclose a second message component in the grant message sent over a second control channel.

Periyalwar discloses a common channel to send the rate control messages (column 9, lines 1-20).

Periyalwar realizes the advantage of more effective power control by using variable data rate settings in a grant message (column 4, lines 44-50). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Periyalwar with the method of Padovani.

With respect to claim 5, Padovani fails to disclose sending a rate control instruction that indicates transmitting at a rate limit.

Periyalwar, in a method for wireless communication networks, discloses a technique (Abstract; Figure 1) for establishing a transmission rate between a base station and mobile station that includes a rate-control bit message (column 12, lines 65-67) containing a specific rate of transmission (806 of Figure 8).

Periyalwar realizes the advantage of more effective power control by using variable data rate settings in a grant message (column 4, lines 44-50). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Periyalwar with the method of Padovani.

With respect to claim 7, Padovani further discloses a technique of sets a data rate request by transmitting relative value to indicate a higher or lower data rate (column 34, line 64—column 35, line 10). Padovani teaches the benefit of reduced transmission rate for control signals by sending relative values (column 35, lines 8-10).

Padovani does not disclose a rate control instruction as part of the grant message.

Periyalwar, in a method for wireless communication networks, discloses a technique (Abstract; Figure 1) for establishing a transmission rate between a base station and mobile station that includes a rate-control bit message (column 12, lines 65-67) containing a specific rate of transmission (806 of Figure 8).

Periyalwar realizes the advantage of more effective power control by using variable data rate settings in a grant message (column 4, lines 44-50). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Periyalwar with the method of Padovani.

With respect to claim 11, Padovani discloses a method for high rate packet data transmission in a wireless CDMA system where a mobile station sends a request for high speed data transmission to a base station (810 of Figure 8; column 30, lines 11-18) and the base station sends a grant back to the mobile station (814, 816 of Figure 8; column 30, lines 11-18) to initiate the high speed data transmission (818 of Figure 8; column 30, lines 11-18). The grant also resets a data rate limit from the lowest data rate to a higher data rate (column 29, lines 57-60).

Padovani does not disclose that the grant, by itself, sent from the base station to the mobile station will establish a rate limit for further transmissions from the mobile station; and a rate control scheduling mode protocol.

Periyalwar, in a method for wireless communication networks, discloses a technique (Abstract; Figure 1) for establishing a transmission rate between a base station and mobile station that includes a rate-control bit message (column 12, lines 65-67) containing a specific rate of transmission (806 of Figure 8). Periyalwar uses a rate control protocol (Abstract; based on interference levels and required transmission energy) to set transmit rates.

Periyalwar realizes the advantage of more effective power control by using variable data rate settings in a grant message (column 4, lines 44-50). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Periyalwar with the method of Padovani.

With respect to claim 13, Padovani discloses a method for high rate packet data transmission in a wireless CDMA system where a mobile station sends a request for high speed data transmission to a base station (810 of Figure 8; column 30, lines 11-18) and the base station sends a grant back to the mobile station (814, 816 of Figure 8; column 30, lines 11-18) to initiate the high speed data transmission (818 of Figure 8; column 30, lines 11-18). The grant also resets a data rate limit from the lowest data rate to a higher data rate (column 29, lines 57-60).

Padovani does not disclose that the grant, by itself, sent from the base station to the mobile station will establish a rate limit for further transmissions from the mobile station.

Periyalwar, in a method for wireless communication networks, discloses a technique (Abstract; Figure 1) for establishing a transmission rate between a base station and mobile station that includes a rate-control bit message (column 12, lines 65-67) containing a specific rate of transmission (806 of Figure 8). Periyalwar uses a rate control protocol (Abstract; based on interference levels and required transmission energy) to set transmit rates.

Periyalwar realizes the advantage of more effective power control by using variable data rate settings in a grant message (column 4, lines 44-50). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Periyalwar with the method of Padovani.

With respect to claim 14, Padovani discloses sending the grant message to the mobile station over a pilot/DRC channel (column 30, lines 42-45).

Padovani fails to disclose a second message component in the grant message sent over a second control channel.

Periyalwar discloses a common channel to send the rate control messages (column 9, lines 52-55).

Periyalwar realizes the advantage of more effective power control by using variable data rate settings in a grant message (column 4, lines 44-50). Thus it would

have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Periyalwar with the method of Padovani.

With respect to claim 17, Padovani discloses a method for high rate packet data transmission in a wireless CDMA system where a mobile station sends a request for high speed data transmission to a base station (810 of Figure 8; column 30, lines 11-18) and the base station sends a grant back to the mobile station (814, 816 of Figure 8; column 30, lines 11-18) to initiate the high speed data transmission (818 of Figure 8; column 30, lines 11-18).

Padovani does not disclose that the grant sent from the base station to the mobile station will establish a rate limit for further transmissions from the mobile station; and a rate control scheduling mode protocol.

Periyalwar, in a method for wireless communication networks, discloses a technique (Abstract; Figure 1) for establishing a transmission rate between a base station and mobile station that includes a rate-control bit message (column 12, lines 65-67) containing a specific rate of transmission (806 of Figure 8). Periyalwar uses a rate control protocol (Abstract; based on interference levels and required transmission energy) to set transmit rates.

Periyalwar realizes the advantage of more effective power control by using variable data rate settings in a grant message (column 4, lines 44-50). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Periyalwar with the method of Padovani.

With respect to claim 18, Padovani discloses a method for high rate packet data transmission in a wireless CDMA system where a mobile station sends a request for high speed data transmission to a base station (810 of Figure 8; column 30, lines 11-18) and the base station sends a grant back to the mobile station (814, 816 of Figure 8; column 30, lines 11-18) to initiate the high speed data transmission (818 of Figure 8; column 30, lines 11-18). The grant also overrides a data rate limit from the lowest data rate to a higher data rate (column 29, lines 57-60). Padovani further discloses that the mobile station will receive transmissions once the grant has been scheduled.

Padovani does not disclose that the grant, by itself, sent from the base station to the mobile station will establish a rate limit for further transmissions from the mobile station; and a rate control scheduling mode protocol.

Periyalwar, in a method for wireless communication networks, discloses a technique (Abstract; Figure 1) for establishing a transmission rate between a base station and mobile station that includes a rate-control bit message (column 12, lines 65-67) containing a specific rate of transmission (806 of Figure 8). Periyalwar uses a rate control protocol (Abstract; based on interference levels and required transmission energy) to set transmit rates.

Periyalwar realizes the advantage of more effective power control by using variable data rate settings in a grant message (column 4, lines 44-50). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Periyalwar with the method of Padovani.

With respect to claim 22, Padovani discloses a method for high rate packet data transmission in a wireless CDMA system where a mobile station sends a request for high speed data transmission to a base station (810 of Figure 8; column 30, lines 11-18) and the base station sends a grant back to the mobile station (814, 816 of Figure 8; column 30, lines 11-18) to initiate the high speed data transmission (818 of Figure 8; column 30, lines 11-18). The grant also overrides a data rate limit from the lowest data rate to a higher data rate (column 29, lines 57-60). Padovani further discloses that the mobile station will receive transmissions once the grant has been scheduled.

Padovani does not disclose that the grant, by itself, sent from the base station to the mobile station will establish a rate limit for further transmissions from the mobile station; and a rate control scheduling mode protocol.

Periyalwar, in a method for wireless communication networks, discloses a technique (Abstract; Figure 1) for establishing a transmission rate between a base station and mobile station that includes a rate-control bit message (column 12, lines 65-67) containing a specific rate of transmission (806 of Figure 8). Periyalwar uses a rate control protocol (Abstract; based on interference levels and required transmission energy) to set transmit rates.

Periyalwar realizes the advantage of more effective power control by using variable data rate settings in a grant message (column 4, lines 44-50). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Periyalwar with the method of Padovani.

With respect to claim 23, Padovani further discloses the mobile station will transmit NASK message on the reverse link channel after the grant arrives at the mobile station and it begins to transmit (column 35, lines 37-43).

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Padovani in view of Periyalwar and further in view of Lal et al. ("Distributed Resource Allocation for DS-CDMA based Multi-media Wireless LANs", 21 October 1998, IEEE Proceedings of MILCOM 1998, pg 583-588; hereafter Lal).

With respect to claim 6, Padovani fails to disclose a rate control instruction and if the rate control instruction is not sent then no transmission is generated by the mobile station.

Lal disclose that a wireless transmitter, viewed as equivalent to the mobile station, will request a transmission with a receiver by sending a RTS_{ji} message then waiting for a CTS_{ji} message or $PREJ_{ji}$ message and if no CTS_{ji} message or $PREJ_{ji}$ message is received then no data will be transmitted.

Lal realizes the advantage of greater flexibility and faster transmission setup by using variable data rate settings in a grant message (Section 1: Introduction, pg 583, left column and right column). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Lal with the method of Padovani.

7. Claims 8-10, 15, 16, 19-21, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Padovani in view of Periyalwar and further in view of Bae et al. (US 2003/0093364; hereafter Bae).

With respect to claim 8, Padovani does not disclose sending an extra schedule grant message that resets a rate limit.

Bae, in a related field of endeavor, discloses a base station that transmits a ReverseRateLimit (RRL) message to a mobile station in order to reset the rate limit of a previous transmission session (paragraph [0014], paragraph [0015], Table 3).

Bae realizes the benefit of overload protection for the base station by controlling mobile station data rates on the reverse link (paragraph [0005]). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Bae with the method of Padovani.

With respect to claim 9, Padovani does not disclose determining a change in rate limit between a previous transmission and a currently scheduled transmission and changing a rate limit if the change does not exceed a threshold.

Bae, in a related field of endeavor, discloses a mobile station that receives a Reverse Activity Bit (RAB) indicating a data rate change then comparing a threshold or Persistence Vector (PV) to a random number to decide if the current data rate will be modified by the mobile station (paragraph [0008], paragraph [0018]).

Bae realizes the benefit of overload protection for the base station by controlling mobile station data rates on the reverse link (paragraph [0005]). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Bae with the method of Padovani.

With respect to claim 10, Padovani does not disclose sending an extra schedule grant message that resets a rate limit.

Bae, in a related field of endeavor, discloses a base station that transmits a ReverseRateLimit (RRL) message to a mobile station in order to reset the rate limit of a previous transmission session (paragraph [0014], paragraph [0015], Table 3).

Bae realizes the benefit of overload protection for the base station by controlling mobile station data rates on the reverse link (paragraph [0005]). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Bae with the method of Padovani.

With respect to claim 15, Padovani does not disclose decreasing a data rate limit when no rate control instruction is received and increasing a data rate limit when a rate control instruction is received.

Bae, in a related field of endeavor, discloses a base station that increases data rate when no RAB is received and decreases data when an RAB is received (paragraph [0008]). It would be obvious to reverse the effect of RAB with respect to its increase or decrease of the data rate.

Bae realizes the benefit of overload protection for the base station by controlling mobile station data rates on the reverse link (paragraph [0005]). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Bae with the method of Padovani.

With respect to claim 16, Padovani does not disclose adjusting a data rate limit based on sum of rate control instructions receiver since the initial grant message.

Bae, in a related field of endeavor, discloses a base station that increases data rate when no RAB is received and decreases data when an RAB is received (paragraph

[0008]). The base station sends the RAB periodically to the mobile station so that its effect it cumulative over time (paragraph **[0006]).**

Bae realizes the benefit of overload protection for the base station by controlling mobile station data rates on the reverse link (paragraph **[0005]).** Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Bae with the method of Padovani.

With respect to claim 19, Padovani does not disclose changing the data rate setting for a mobile station based on the load at a base station and conducting the changing for a mobile station when the load at a base station is near congestion.

Bae, in a related field of endeavor, discloses a base station that controls overload conditions by commanding mobile station to increase or decrease data rate with an RAB sent periodically to mobile stations (paragraph **[0006]** and paragraph **[0005]).**

Bae realizes the benefit of overload protection for the base station by controlling mobile station data rates on the reverse link (paragraph **[0005]).** Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Bae with the method of Padovani.

With respect to claim 20, Padovani does not disclose changing the data rate setting for a mobile station based whether or not the mobile station has ignored or responded to a schedule grant message.

Bae, in a related field of endeavor, discloses a base station that controls overload conditions by commanding mobile station to increase or decrease data rate with an RAB sent periodically to mobile stations (paragraph **[0006]** and paragraph **[0005]).**

Furthermore the base station is informed of a mobile station's current data rates by receiving and observing Reverse Rate Indicators (RRIs) send by the mobile station (paragraph [0013]).

Bae realizes the benefit of overload protection for the base station by controlling mobile station data rates on the reverse link (paragraph [0005]). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Bae with the method of Padovani.

With respect to claim 21, Padovani does not disclose changing the data rate setting for each mobile station based whether or not each mobile station has ignored or responded to a schedule grant message.

Bae, in a related field of endeavor, discloses a base station that controls overload conditions by commanding mobile station to increase or decrease data rate with an RAB sent periodically to mobile stations (paragraph [0006] and paragraph [0005]). Furthermore the base station is informed of each mobile station's current data rates by receiving and observing Reverse Rate Indicators (RRIs) send by each mobile station (paragraph [0013]).

Bae realizes the benefit of overload protection for the base station by controlling mobile station data rates on the reverse link (paragraph [0005]). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Bae with the method of Padovani.

With respect to claim 24, Padovani does not disclose adjusting a data rate limit based on sum of rate control instructions receiver since the initial grant message.

Bae, in a related field of endeavor, discloses a base station that increases data rate when no RAB is received and decreases data when an RAB is received (paragraph [0008]). The base station sends the RAB periodically to the mobile station so that its effect it cumulative over time (paragraph [0006]).

Bae realizes the benefit of overload protection for the base station by controlling mobile station data rates on the reverse link (paragraph [0005]). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Bae with the method of Padovani.

8. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Padovani in view of Periyalwar and further in view of Yoon et al. (US 2004/0203397; hereafter Yoon).

With respect to claim 25, Padovani does not disclose setting a secondary pilot level based on a weighted average of the secondary pilot levels corresponding to possible transmission rates.

Yoon, in the field of signal processing for CDMA system, discloses a method that computes a pilot weighted value at a receiver from multiple transmitter signals (paragraph [0056], paragraph [0057], and equation 4).

One of ordinary skill in the art would realize the benefit of less carrier to interface losses by using the power weighted estimate to set the pilot level of the mobile station in Padovani. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Yoon with the method of Padovani.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian O'Connor whose telephone number is (571)270-1081. The examiner can normally be reached on M-F, 9AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dang Ton can be reached on 571-272-3171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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